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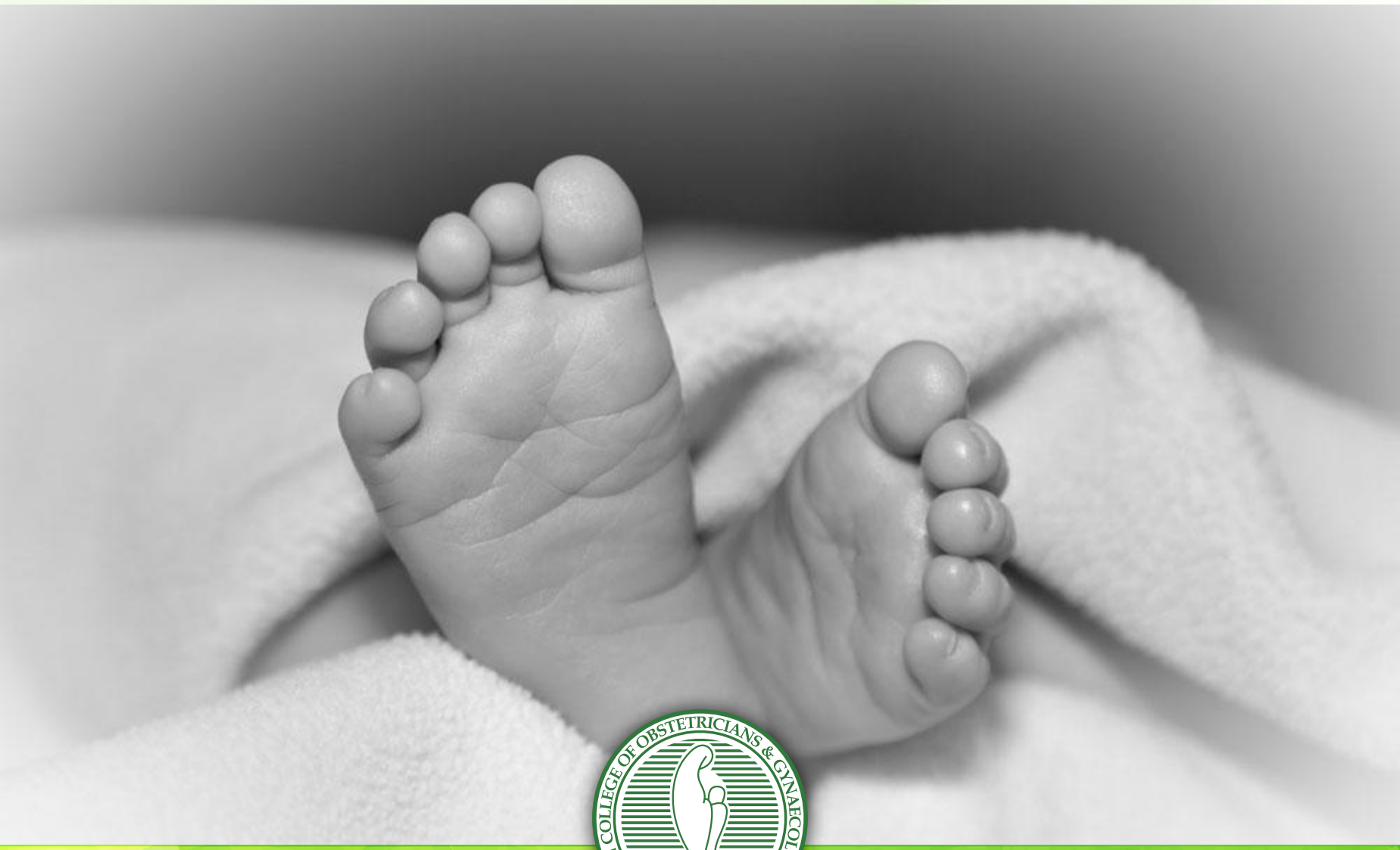

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Decoding Still Birth

President's Address

Dr. Rishma Dhillon Pai
President FOGSI

Dear All !

Stillbirth is one of the most distressing complications of pregnancy and still occurs far too frequently. The rate of stillbirth has been decreasing worldwide but room for improvement remains. Risk factors for stillbirth have been largely identified and interventions to prevent stillbirth include antenatal testing of high-risk women, ultrasonographic assessments of fetal growth, doppler velocimetry as well as iatrogenic preterm or term delivery. Additional research into the role of these interventions and better identification of those at high risk for stillbirth will help to achieve further stillbirth reduction.

Team ICOG has worked on yet another dedicated issue of newsletter on 'Decoding Still Birth' which brings forth to its readers a comprehensive insight into the feto-maternal evaluation of a case of stillbirth and also grief counselling.

I am sure this will be beneficial for all the practitioners.

Happy reading to all

Chairperson's Address

Dr. Mala Arora
Chairperson ICOG
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The tragic loss of a baby in utero is devastating. To find an explanation is vital yet challanging.

The causes may be fetal maternal placental or infective. Hence both gross and microscopic examination of the fetus and placenta is important as well as an infection screen.

Minimally invasive autopsy should be done for all fetuses as well as genetic screening preferably with microarray. Simple karyotyping is likely to miss the single gene defects. Evidence suggests that intrauterine growth restriction precedes all stillbirths. Hence a careful antenatal assessment of all growth restricted fetuses is important for prevention of stillbirth.

Induction with mesoprostol and Vaginal Delivery should be the aim with keeping the mother comfortable and pain free.

Important aspects are allowing the mother to grieve and providing a keepsake photograph, if desired. Training the staff to hand over the baby in a sensitive manner is often missed.

Future pregnancies are a challange to care for and early booking with frequent assessment of fetal well being as well as reassurance scans will allay anxiety.

Secretary's Message

Dr. S. Shantha Kumari
Secretary ICOG

Dear All !

A "stilbirth" is a serious catastrophe in pregnancy and remains usually an unanticipated clinical disaster, much to everyone's agony. While the Stilbirth marks the "end" of one journey for the mother, it is actually the "beginning" of a long road for the obstetrician- one that starts with counseling about the immediate aftermath of the situation and moves on to investigating the causes and making a plan for the future reproductive health. While none of us forget our experiences with stilbirths, fewer people even discuss the event and much remains unsorted in clinical practice regarding proper management of issues surrounding a stilbirth.

This edition of the newsletter is dedicated to the very difficult and daunting topic of stilbirths including an article on " unexplained stillbirths "which is a situation that stumps even the most experienced Obstetricians.

We begin the new year with this enigmatic topic to set your brains working in a positive direction and empower you to tackle a situation so difficult that you feel everything gets simpler now.

Happy Reading!

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Greetings to All!

We present to you yet another dedicated issue of our newsletter this month i.e. '**Decoding Still Birth**'.

In 2015 there were 2.6 million stillbirths globally, with more than 7178 deaths a day. The majority of these deaths occured in developing countries. Ninety-eight percent occurred in low- and middle-income countries. Addressing the epidemic of stillbirths has been recognised as an essential part of the post-2015 sustainable development agenda.

About half of all stillbirths occur in the intrapartum period, representing the greatest time of risk. Estimated proportion of stillbirths that are intrapartum varies from 10% in developed regions to 59% in south Asia.The majority of stillbirths are preventable, evidenced by the regional variation across the world. The rates correlate with access to maternal healthcare.

In this issue, we bring you an overview of global scenario for still births, comprehensive maternal and fetal evaluation including the concept of detailed genetic evaluation in a case of still birth. There is also a feature on systematic handling of a case of unexplained still birth which will be beneficial for all practitioners. Later we have a coverage related to breaking the bad news and grief counselling of the parents and the families which also forms an important aspect of overall management of such cases. The issue ends with an interesting brainteasers section to stimulate the minds of readers.

I would like to wish happy reading to all of you.

"It is the hopeful, buoyant, cheerful attitude of mind that wins. Optimism is a success builder, pessimism an achievement killer."

— Orison Swett Marden

Overview of Stillbirth: Global Perspective

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WHAT WE KNOW ABOUT STILLBIRTH- A DEVASTATING TRAGEDY

Stillbirth is defined as a baby born at or after 22 weeks of gestation and /or having more than 500gm of weight with no signs of life. Types of stillbirth are denoted depending on duration of fetal demise as fresh or macerated depending on peeling of the skin which takes place when 24 hours have elapsed but may start as early as 12 hours after fetal demise. Early stillbirths are those between 22 weeks to 28 weeks and late stillbirths are 28 weeks or more. The global incidence is 18.9 per 1000 births and in India it is 22.9 per 1000 births. Collectively 7177 stillbirths take place everyday in the world, highest in India.

CLASSIFICATION OF STILLBIRTH FOR ASSIGNING CAUSE OF DEATH

More than 35 classifications were described in last 50 years. Each system has different approach of assigning a cause of death. The commonly used classifications are mentioned in table 1. The classification having lower number of unexplained stillbirths is considered for practical usage.

Aberdeen, Wigglesworth, Recode, PSANZ, Tulip and CODAC classifications are used at most places. The latest is the ICD-PM classification of WHO (2016) which is a much simplified one as compared to other classifications. The maternal and fetal factors surrounding stillbirth, the population studied and the country in which it is practiced is shown in table 2.

A system that takes into consideration the cause of death and the associated factors as well is near ideal for classification of stillbirth. The currently used system is CODAC(cause of death and associated conditions).

RISK FACTORS FOR STILLBIRTH

- Pre-existing
- Pregnancy related
- Intrapartum

Broadly describing pre-existing factors may be stillbirth, obesity, medical disorders and socioeconomic factors. Pregnancy related factors can be age, parity, maternal infections, drugs, inadequate antenatal care and maternal co-morbid conditions. The intrapartum care forms an important component for causation of stillbirth

FETAL CAUSES

Fetal causes contribute to about 25-40% of stillbirths

- Chromosomal abnormalities
- Non-chromosomal birth defects
- Non-immune hydrops
- Infections-Viruses, Bacteria, Protozoa

PLACENTAL CAUSES

Placental causes contribute to about 25-35% of stillbirths

- Abruption
- Fetal-maternal haemorrhage
- Placental insufficiency
- Intrapartum asphyxia
- Previa
- Twin to twin transfusion
- Chorioamnionitis, Vasa previa, True knot, strictures, haematoma

MATERNAL CAUSES

Maternal causes contribute to about 5-10% of stillbirths

- Antiphospholipid antibodies, Thrombophilia
- Diabetes
- Hypertensive disorders
- Trauma
- Abnormal labour,Mismanaged labour
- Infection,Sepsis
- Acidosis,Hypoxia
- Post-term pregnancy
- Drugs, Smoking
- Obesity
- Age > 35 years
- Thyroid disease, Renal disease, Preterm labor
- Previous growth-restricted infant
- Previous stillbirth

UNEXPLAINED

15 to 35 percent of cases of still birth are due to unexplained cause.

WHAT TO DO WHEN A STILLBIRTH TAKES PLACE

Maternal evaluation

Review of history for APH, trauma, PROM, febrile conditions around delivery, blood tests for blood group, OGTT, infective

Table 1: Commonly used classification systems

	Information	Ease of doing	Inter rate agreement	Unexplained stillbirth
Aberdeen	1.35	2.65	poor	44%
Wigglesworth	1.21	2.80	poor	50%
Recode	1.92	2.92	Good to fair	15%
PSANZ	2.36	3.21	Good to fair	Not known
Tulip	2.77	2.61	Best	10.2%
Codac	3.4	3.4	Good to fair	9.4%

Table 2: Classification systems followed in various countries with studied population and factors for still births

Classification	Country	Population	Factors	Agreement
Amended Aberdeen 1969	UK	SB, NND	Maternal, Fetal	Good
Extended Wigglesworth 1986	UK	SB,NND	Maternal, Fetal	Fair
PSANZ CDC 2004	Australia	SB (20wks), NND	Maternal, fetal, Limited placental pathology	Excellent
ReCode	UK	SB	Maternal, fetal, some placental pathology	Fair
Tulip 2006	Netherlands	SB, NND(16weeks)	Maternal fetal, some placental pathology	Excellent

workup, rule out co-morbid conditions like thyroid disorders, immunological workup and genetic studies in selected cases may be done.

Fetal Evaluation

Fetal gross examination for congenital anomalies and autopsy in all unexplained cases is indicated. Infantogram may be needed in suspected skeletal anomalies.

Placental evaluation entails gross and microscopic examination for evidence of chorioamnionitis, microthrombi and thrombosis.

MANGEMENT

Vaginal delivery should be the aim unless contraindicated. Counseling of the patient and attendants is an essential part of stillbirth management specially when it takes place intrapartum. Encourage mother to vaginal birth after 24-48h.

Induction of labour is indicated in medical conditions when maternal risk is high as in cases of hypertensive disorders of pregnancy, features suggestive of choriamnionitis , deranged co-agulation profile after correcting it and in cases of psychological upset in mother.

Before 28 weeks of gestation, vaginal misoprostol appears to be the most efficient method of induction, regardless of cervical Bishop score , although high-dose oxytocin infusion also is an acceptable choice . Typical dosages for misoprostol use are 200–400 mcg vaginally every 4–12 hours. After 28 weeks of gestation, induction of labor should be managed according to usual obstetric protocols.

Case based-Transcervical Foley catheter, ARM, LSCS may be required. Suppression of milk and mechanical breast support is usually advised when required.

WAY FORWARD

Every newborn action plan explained in the Lancet article aims to bring down stillbirth rate to below 12 per 1000 live births by 2030. India in 2014 adopted the India newborn action plan with the aim to reach single digit stillbirth rate by 2030 a dream not far from reality if worked upon with integrity.

SUGGESTED READING

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2. National, regional and worldwide estimates of stillbirth rates in 2009 with trends since 1995, World Health Organization report 2009
3. Neonatal and perinatal mortality: country, regional and global estimates, World Health Organization report 2006

"Around here, we don't look backwards for very long.

We keep moving forward,

opening up new doors and doing new things,

because we're curious...

and curiosity keeps leading us down new paths."

—Walt Disney

Maternal Evaluation in Still Birth

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INTRODUCTION

Still birth is an end result of multiple factors and complex chain of events and retrospectively it is very difficult to assign the cause. There are number of known risk factors for still birth but having a risk factor does not mean for sure to have a still birth. For example, Hypertensive disorder of pregnancy is the commonest and known risk factor to cause a still birth but cause of still birth can be due to chronic placental insufficiency (Intrauterine growth retardation), acute placental complication (Toxemic abruption), Eclampsia (fetal hypoxia), fetal factors like birth defects or multiple pregnancy, intrapartum loss (fetal distress, fetal trauma) or unexplained. So maternal evaluation is mandatory to diagnose the actual cause and to identify the associated risk factors in cases of unexplained which might help in reducing the preventable still births in subsequent pregnancy.

DEFINITION OF STILL BIRTH

Still birth or Intrauterine fetal death (IUFD) is death of a fetus of more than 20 weeks of gestation or weight of more than 500gm prior to complete expulsion or extraction from mother. WHO defines still birth as baby born with no sign of life at or after 28 weeks for international comparison[1].

PREVALENCE

Globally among 2 .6 million still births, 98% occurs in low-income and middle-income countries and India contributes highest among them[2,3] . In India about 6 lakhs still birth occurs every year and as per lancet 2011, calculated still birth rate is 22 per 1000 total births.

CAUSES OF STILL BIRTH

Cause of still birth can be broadly divided in to fetal, placental, maternal, infections and unexplained. In most of the studies in literature a significant proportion remains unexplained which may be attributed to lack of uniform protocols for evaluation and classifying still birth**.** In a systemic review for causes of still birth in developed countries, unexplained was found to be predominantly high inspite of high autopsy rate. Between 24 and 27 weeks of gestation, Infection, congenital anomalies and abruptions were common whereas in gestation of 28 or more, unexplained i.e. unexplained by fetal, placental, maternal, or obstetric factors was the most frequent type of still birth (between 25% and 60% of all still births)[4]. But in countries with high prevalence of "unexplained" still birth are actually unexplored as cause of death is being assigned before full post natal investigations . Unexplained still birth is most distressing outcome of a pregnancy where no strategy can be planned for prevention.

RISK FACTORS FOR STILL BIRTH

Identification of risk factors for still births helps a clinician to assess the risk for each and every patient. There are many identified maternal risk factors which are found to be associated with still birth and are different for both high middle income and low middle income countries. In high income countries the common risk factors are non Hispanic black race, nulliparity, advanced maternal age and obesity whereas in low middle income countries , maternal infection, fetal asphyxia, trauma, congenital abnormalities, fetal-maternal hemorrhage, and a variety of medical conditions of the mother are common[4,5,6]. These all should be evaluated with history in detail including blood investigations. Risk factors found to be associated with still births in different studies [5,7,8] can be grouped and summarized as in (Table 1)

MATERNAL EVALUATION

The most essential is to confirm and diagnose still birth by real time ultrasonography because auscultation of fetal heart by pinard stethoscope or Doppler is not always accurate[8]. During ultrasound in addition to absent fetal cardiac activity, other secondary features should be looked upon like gross congenital malformation, liquor, hydrops and fetal skull bones. Although the sensitivity to diagnose abruption by ultrasound is low, still evidence of occult abruption may help in further management[8].

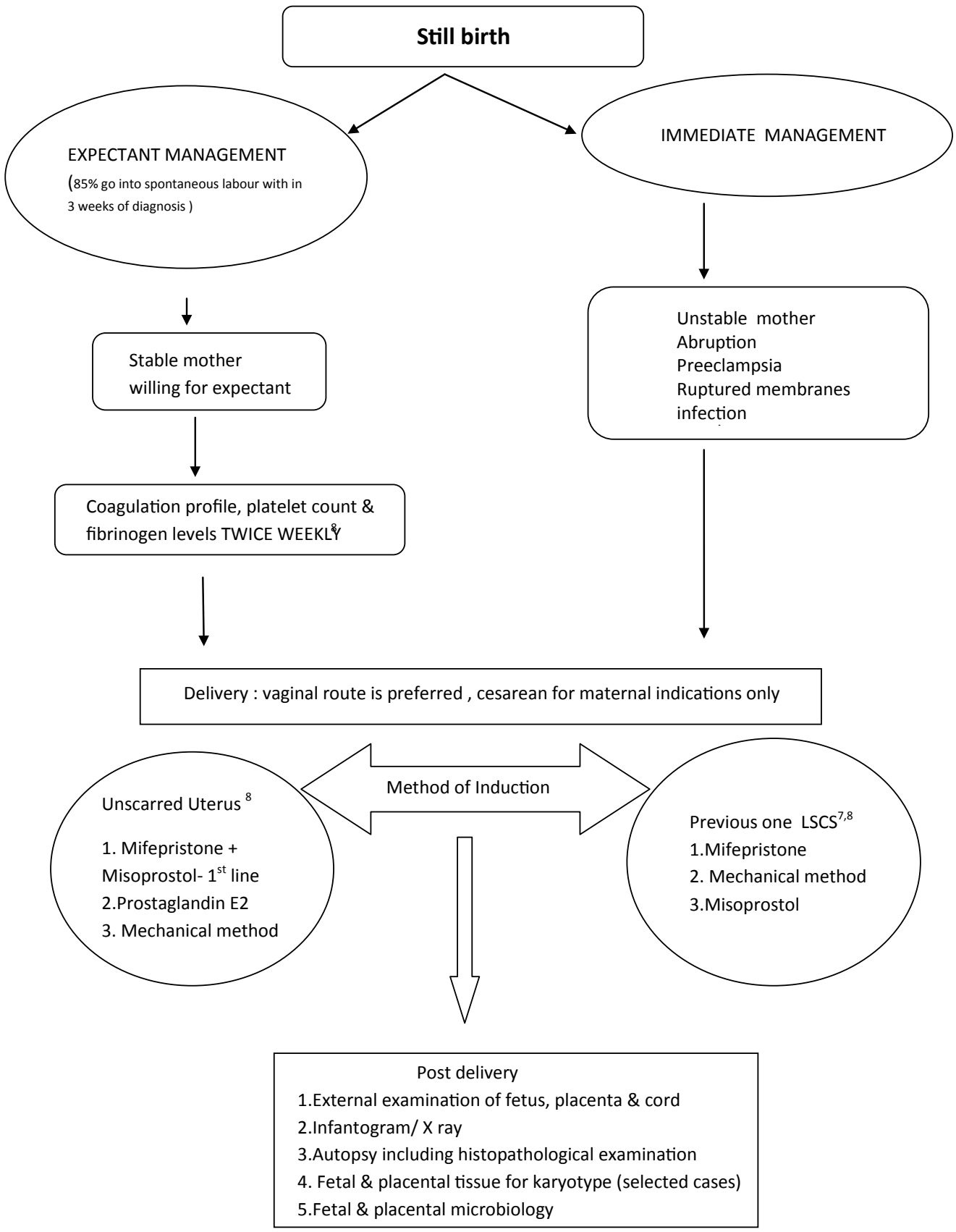
After diagnosis, a systemic approach by taking detailed history of presenting symptoms, past medical history , obstetric history and family history with three generation pedigree along with clinical examination may help to assign the cause or isolate the risk factor or etiology associated. Confirmation of period of gestation should be done either by dating or ultrasound whatever is available. Clinical examination

Table 1: Risk factors for still births

A.Current pregnancy	B. Past Obstetric History	C. Past Maternal Medical history	D. Family History
• Advanced maternal age	• Previous still birth	• Thromboembolic disorders	• Familial disorders
• Nulliparity	• Unexplained IUFD	• Diabetes mellitus	• Recurrent abortions
• High Pre pregnancy weight	• Recurrent abortions	• Chronic Hypertension	• Venous thromboembolism
• Inadequate prenatal care	• History of abruption in previous pregnancy	• Thrombophilia	• Pulmonary embolism
• Obstetrics Cholestasis	• IUGR in previous pregnancy	• Autoimmune disease	• History of child born with congenital anomaly, abnormal karyotype or syndrome
• Gestational diabetes mellitus	• Pre eclampsia	• Epilepsy	• Child of documented developmental delay in family
• Pre eclampsia – Eclampsia		• Anemia	• Consanguinity
• Rupture of membranes		• Maternal Cyanotic heart disease	
• Pre term labour			
• Multiple pregnancy			
• Lower socieoeconomic status			
• Smoking/ alcohol consumption/ drug abuse			

Table : 2 List of maternal Investigation

Routine investigation to be done all cases	In selected cases
• Complete blood count • Biochemistry including bile salts • Coagulation profile • Blood group & Antibody titres • Hemoglobin electrophoresis • Random blood glucose • Glycocylated Hemoglobin • Thyroid function • Kleihauer betke test • Serology for viral screen, syphilis, tropical infection	• Maternal Bacteriology – maternal fever, flu like symptoms, abnormal liquor, prolonged leaking PV • Maternal thrombophilia screen • Anti-red cell antibody serology • Maternal anti –Ro & anti –La Antibodies • Maternal alloimmune antiplateletantibodies • Parental karyotype - Fetal unbalanced translocation - Other fetal aneuploidy - Fetal abnormality on autopsy - Previous unexplained still birth - Recurrent miscarriages



helps in detecting number of conditions like hypertension, anemia, jaundice, fever, intrauterine growth retardation, large baby, abruption and chorioamnionitis which are known to be cause still birth.

LABORATORY INVESTIGATIONS

Complete hemogram with platelet count including biochemistry should be done in all women with IUFD to rule out preeclampsia or occult DIC or sepsis. Bile acids should be estimated in women with history suggestive of obstetrics cholestasis or unexplained still birth[9]. Fetomaternal hemorrhage is one of the known cause of still birth and Kleihauer betke test is to be performed to diagnose and to calculate the dose of anti RhD gammaglobin to be given in cases of massive hemorrhage.[10] Maternal random blood glucose and maternal HbA1c to be done diagnose occult gestational diabetes mellitus because after IUFD, even gestational diabetic woman will have normal glucose tolerance with in few hours.[11,12,13] Thyroid function, Viral serology and VDRL for syphilis to be done if not done in antenatal period. Blood culture, urine culture, vaginal & cervical swab to be sent in suspected infection cases only. Along with other maternal bacterial infections, listeria monocytogenes and Chlamydia species have been found to associated with still births. [14,15] Thrombophilia workup should be reserved for cases of fetal growth restriction, placental disease or unexplained still births.

MANAGEMENT

After the diagnosis of still birth and routine investigation , mother should be explained about the option of prolonged expectant versus immediate management depending upon her current conditions and previous obstetric history. Immediate delivery is advised in cases of sepsis, pre eclamsia, abruption and rupture of membranes. Woman who opt for prolonged expectant management, should be stable with intact membranes and no evidence of preeclampsia, bleeding and infection. In unscarred uterus a combination of mifepristone and prostaglandin preparation has been recommended as first line intervention as per RCOG(level D evidence). For woman with a previous lower segment cesarean section, safety and benefits with associated risks should be assessed by treating obstetrician. Options available are mifepristone, mechanical method of induction and misoprostol. No studies have mentioned the safety and effectiveness of induction in previous cesarean with intrauterine fetal death. As per SOGC (society of obstetrician & gynaecologist of Canada) misoprostol is contraindicated in previous cesarean delivery due to high risk of rupture [7]. But RCOG recommend lower doses of misoprostol can be used safely in previous one lower segment cesarean with intrauterine fetal death [8].

Women with IUFD should be provided emotional support along with routine care during delivery. Antibiotic prophylaxis is not recommended in routine except in cases of sepsis where broad spectrum antibiotics should be given. In cases of previous cesarean, monitoring is most important as earliest sign of scar dehiscence i.e. fetal heart abnormality is not applicable so one should look for maternal tachycardia, scar tenderness, vaginal bleeding, hematuria, receding of presenting part in vaginal examination or sudden collapse.

POST PARTUM AND GRIEF MANAGEMENT

After delivery woman should be given lactation suppression and contraception advice. Along with medical management, psychological support is must and if required referral to counselor or community support system for bereavement to be considered. In Indicated patients with risk factors or suggestive history, thrombo prophylaxis should be considered. Counseling of both parents and family members and need for further investigations of baby should be explained again. Informed written consent of parents should be taken before sending the baby for autopsy.

FOLLOW UP

Post partum follow up visit should be planned after complete investigations so that a clinician can inform the cause of still birth, associated risk factors, chances of recurrence and measures for prevention. In spite of complete evaluation significant number of still birth remains unexplained and in low risk women with previous unexplained still birth the risk of recurrence after 20 weeks is again high i.e. 7.8 to 10.5 per 1000 whereas after 37 weeks only 1.8 per 1000 births[16].

CONCLUSION

Assigning the actual cause of still birth by complete evaluation of both mother as well fetus not only helps a clinician to manage that particular woman but also helps to plan strategies to decrease the still birth rate as a whole. Proper counseling, management including bereavement support with assigning cause of still birth after complete postnatal workup is likely to help.

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Fetal Evaluation of Stillbirth

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WHY SHOULD FETAL AUTOPSY BE DONE?

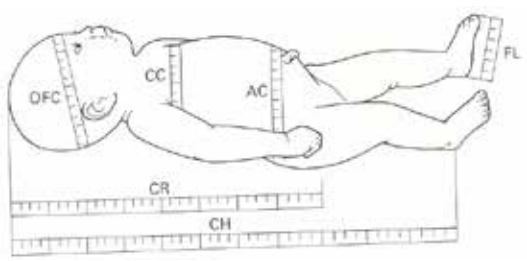
A fetal loss at whatever gestation is a matter of grief and concern to the family. The information regarding the prognosis of an anomaly can be gained by doing an ultrasound but this knowledge may not be enough for counselling regarding future risk. When anomaly is detected during the antenatal scan, besides knowing the prognosis, the chance of recurrence is also a matter of concern to the couple. Fetal autopsy is included in the basic investigation protocol of perinatal death [1]. Fetal autopsy is found to add to the diagnosis in 30 – 50 % cases and thus aid in counselling regarding risk of recurrence in future[1, 2]. If confirmation of clinical findings is also considered, then perinatal autopsy has value in up to 100% of cases [2]. A Co-ordinated effort of the obstetrician, pediatrician and pathologist is required while investigating a perinatal death.

COMPONENTS OF FETAL AUTOPSY

Consent

It is imperative that the discussion on the importance of postmortem examination of the baby can be brought up in antenatal period itself. Clinicians approaching parents for autopsy consent should discuss the options for a full, limited, or step-wise postmortem examination. They should also discuss the issues of retained fetal tissues, the value of autopsy, and the possibility that information gained may not be of benefit to them but may benefit others. There must also be written information available to parents, describing the perinatal autopsy, as an adjunct to the explanations given by the clinical team.

Biometry



The size and weight of the body should correlate with age and are affected by disorders of growth and development. These weights and measurements must be accurate and compared with normal charts. The crown–heel and crown–rump lengths should be determined to the nearest 5 mm [3]. Normally in fetuses and young infants, occipito-frontal circumference (OFC) and crown–rump (CR) lengths should not differ by more than 10 mm. Distances between inner canthi and outer canthi should be obtained. Chest and abdominal circumference are measured at the level of the nipples and umbilicus respectively. Foot lengths should be obtained, as this measurement correlates well with gestational age.

Photograph

High-quality photographs are an important part of the fetal autopsy procedure. Frontal, lateral, and dorsal pictures of the fetus, with a close up of the cleaned face, of any unusual findings, and of both maternal and fetal placental surfaces, are a strict minimum. A list of photographs should be mentioned in the report. The photographs should be labelled and led in the medical record or in a computerized archival system. The use of digital imaging for this purpose is optimal; however, issues regarding patient consent and confidentially should be considered. Photographs are useful for teaching and publication and can be used for external consultation when needed.

Infantogram or Fetogram

Standard radiography should be used in all cases of fetal anomaly or unexplained stillbirth. The fetogram should be performed before the internal examination. Olsen et al[4] report abnormal radiographs in 30% of fetograms performed in a population-based set of 542 perinatal deaths. New information about the pathological process was found in 8.6%. Radiographs were of vital importance for establishing the cause of death in 3.1 % of the cases. In the presence of fetal anomalies, it is essential to obtain a fetogram to evaluate skeletal anomalies that could lead to the identification of a fetal genetic syndrome.

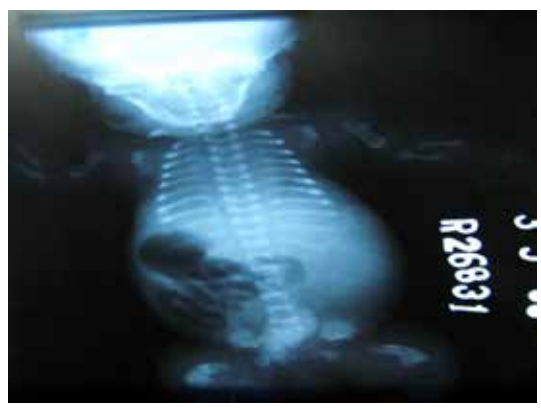


Figure 2: Baby with thanatophoric dysplasia: the fetogram showing severe micromelia typical telephone receiver like femur

External Examination

External examination is of particular importance when the autopsy is declined. It should be performed by experienced clinicians in the field of perinatal/paediatric pathology or clinical genetics or by a paediatrician [3]. In the absence of such expertise, detailed photographs must be taken for future evaluation. While inspecting the external features of the body it is a good practice to keep a list of features to be looked as it ensures that no pertinent feature is overlooked. The extent of maceration must be documented, as it correlates somewhat with the duration of postmortem retention. Dysmorphism, deformations, disproportions, and malformations should be described.

Internal Examination

All major organs must be weighed after careful dissection guided by the published methodology, thereby allowing comparison with expected values. Organ maturity and structure can later be assessed by macroscopic (e.g., cerebral gyration) and/or histologic (e.g., lungs and kidneys) evaluation. Histological examination must assess the presence of changes that could indicate a storage disease or an intrauterine infection (TORCH: toxoplasmosis, other infections, rubella, cytomegalovirus, herpes simplex virus). The relevant tissue was sent for histopathological examination.

Cultures and Toxicology

Specifying the infectious agent is often

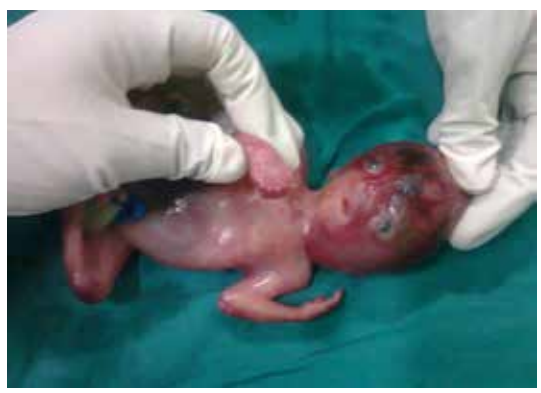
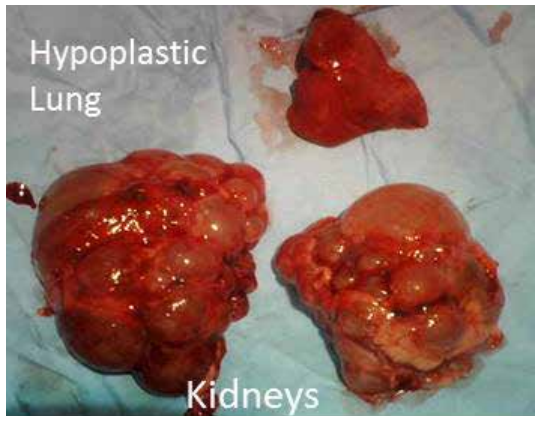


Figure 3: Baby antenatally had bilateral renal atresia on ultrasound, external examination after termination of pregnancy at 16 weeks showed absent eyelids and mitten fingers, features suggestive of Fraser syndrome an autosomal recessive disorder.



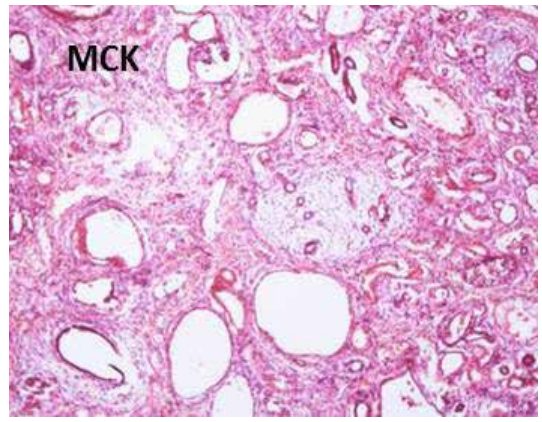


Figure 4: Antenatal diagnosis of multiple cyst of varying size on ultrasound with absent bladder and liquor at 19 weeks. After termination of pregnancy the findings were confirmed on ultrasound and subsequent histopatological examination. Risk of recurrence was given as 1-4%


Figure 5: The baby had massively enlarged bladder with urethral atresia, thinned out abdominal wall and cryptorchidism suggestive of Prune belly syndrome. The abdominal skin is closed after internal examination and the baby is then handed over to the relatives.

possible, particularly when cultures of the placenta or infant are initiated promptly after delivery. Fetal fluid (blood, cerebrospinal fluid) and fetal tissues (spleen or lung) can be used for bacterial or viral cultures.

Karyotype/ Microarray

Genetic causes account for 6-12 % of birth defects, therefore must be advised in all cases of birth defect or unexplained death. As even small size of deletion or duplication can be detected on microarray and tissue does not require culture microarray is to be preferred and should be used as first line investigation if cost permits.[5] Cord blood is collected in heparinized tube. If blood is not available, then part of placenta can be put in culture medium or normal saline. Fetal tissues and placenta are a good source of fetal DNA that can be banked for further studies as indicated.

Examination of placenta and cord

Gross examination of the placenta should follow a routine methodology and should ideally be performed on a fresh sample following brief drainage and removal of non-adherent blood[6]. After delivery of the placenta and before the placenta is sent to pathology, a sample of placenta tissue should be collected from all stillborn and stored until the clinician or pathologist decides whether or not the specimen requires cytogenetic studies. Collection of the placenta tissue sample should be done from the fetal side by the site of cord insertion beneath the amnion.[6] The sample should be placed in sterile saline or other appropriate tissue culture media, sealed, and labelled. The sample should be transported to the cytogenetics laboratory promptly.

HANDING OVER THE BABY

Subsequent to autopsy baby is handed over to the relatives. The couple can be called after 2-3 weeks for re-counselling. The findings at autopsy are correlated with ultrasound findings, note was taken of any additional findings whether present or not, whether the diagnosis remained the same or changed after autopsy.

CAN AUTOPSY BE DONE EVEN IF THERE IS MACERATION?

Even in macerated babies, it is important to establish the cause of death, and, if possible, to exclude the presence or role of congenital anomalies, infection, or other diseases. The pathologist may still derive meaningful findings, such as congenital anomalies, even when tissues are in poor condition. Histologically, viral inclusions are generally still apparent in fetuses with advanced maceration. Skin or viscera are inappropriate for karyotyping in cases of advanced maceration. The placenta can be useful in such cases, microarray can be done in such cases [3].

REASONS FOR REFUSAL

Autopsy may be declined because (a) the parents feel the baby has already suffered enough, (b) the parents assume that prenatal investigations were sufficient, (c) health care professionals failed to provide adequate explanation of autopsy, and (d) the parents were not offered options to postmortem examination [3]. Declining autopsy rates may also be linked to personal values and cultural or religious prohibitions.

NON INVASIVE AUTOPSY

CT Scan

CT imaging is cheaper and significantly faster than MR imaging. However, image contrast in postmortem CT for visceral organs is relatively poor compared to MRI. Nevertheless, for fetuses with skeletal malformations and other bony abnormalities, CT imaging and 3D reconstruction may be superior to conventional X-ray examination. Few recent studies have performed the whole body post-mortem CT angiography by an umbilical vein approach. Further studies are needed to show the reproducibility of this approach, for cardiac and vascular evaluation. The spatial resolution of this technique and the intravascular contrast enhancement should make it superior to MRI[7].

MRI (virtuopsy)

MRI may be offered to parents who decline an autopsy investigation, although the limited availability of MRI and the need for prioritization are concerns in most countries. Clinicians should explain to the parents that a full autopsy remains the gold standard because the MRI does not supply tissue samples, and important information may therefore be missed. Many limitations of using perinatal postmortem MRI are cited in the literature: high cost, limited availability, lack of experience, need for specialist equipment, lower resolution, lack of detection of changes at the histological level, and uncertain value when there is an advanced degree of maceration or autolysis [8]. MRI also provides suboptimal resolution in assessing certain malformations such as skeletal dysplasia.

A recent meta-analysis comparing the performance of MRI with that of conventional autopsies demonstrated a 69% sensitivity (95% CI 56% to 80%) and 95% specificity (95% CI 88% to 98%) in determining the final cause of death or most clinically significant abnormality in 146 foetuses [9] Well-designed large prospective studies are needed to evaluate the accuracy of post-mortem MRI. However, it is almost certain that the use of PM imaging will rapidly become an important integral component of postmortem examination of the fetus and infant in specialist centers.

Minimally invasive tissue sampling (MITS)

New options such as postmortem needle biopsy, laparoscopic autopsy, and small incision access are other alternatives to a full postmortem examination for focused investigation of suspected anomalies, Trucut biopsies or open biopsies through small incisions, particularly from large accessible organs such as liver or lungs, may allow diagnostic histological or metabolic studies. Aspiration of body fluids (cord blood, cerebrospinal fluid, urine, cyst, oedema) for biochemical, hematologic, microbiologic, or metabolic investigations may be considered. These methods have not been fully assessed in the specific context of perinatal death. Biopsy of individual organs clearly has a role in selected cases. The concept of the minimally invasive autopsy is likely to gain more widespread acceptance with changes in public and parental perceptions of the autopsy.[10]

AUTOPSY AT GOVERNMENT HOSPITAL SETUP, OUR EXPERIENCE

There the study was done in LHMC with the aim to increase acceptance of fetal autopsy and to provide better counselling to the couple regarding risk of recurrence in future pregnancies [11]. All cases with antenatally diagnosed congenital anomaly resulting in stillbirth or termination before 20 weeks were offered fetal autopsy and it was performed in labor room itself by the fetal medicine specialist after consents. External and internal examination, photograph, infantogram, karyotyping was done, relevant tissue was sent for histopathology. Correlation between the ultrasound and autopsy finding was done. Total 674 cases of antenatally detected major congenital anomaly were included in the study. Out of 403 cases of stillbirth and abortion, consent for autopsy was given in 312. Most common defect was cranio-vertebral defect followed by genitourinary anomaly. The autopsy finding correlated with USG findings fully in 63.5% cases, there were additional findings altering diagnosis in 24.7% cases, the diagnosis completely changed in 11.8% cases.

Before the commencement of our study, autopsy was conducted only if the couple requested, it involved filling up of consent form and requiring permission from pathologist also, the baby was kept by the department for nearly two months, and the disposal was also an added burden, therefore the autopsy rates were dismal but when the autopsy was conducted in labor room itself the consent was readily given due to timeliness of the procedure. When baby was handed back to the couple, last rites could be performed according to their religion and culture and it added to the acceptance of the procedure.

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"Once we believe in ourselves,

we can risk

curiosity, wonder, spontaneous delight, or any experience

that reveals the human spirit."

— E. E. Cummings

Unexplained Stillbirth

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INTRODUCTION

Unexplained stillbirth is the ultimate nightmare for the treating Obstetrician. Loss of fetal viability is a non-reversible event in itself but when it comes as an unanticipated event, it reverses much of the faith and trust between the patient and doctor and also between the doctor and medical evidence. The word "unexplained" is very unsatisfying for both the doctor and the patient and hence the quest to explain the unexplained becomes the mission in the investigation of an unexplained stillbirth.

By definition, an unexplained stillbirth is a fetal death that cannot be attributed to an identifiable fetal, placental, maternal, or obstetrical etiology due to lack of sufficient information or because the cause cannot be determined at the current level of diagnostic ability.[1] The definition itself highlights that every stillbirth has to be investigated for all known causes and once they are all excluded then only it can be called "unexplained".

The incidence of unexplained stillbirths has been reported to be 25-60% of all stillbirths by different study groups depending on the method of classification, extent of evaluation for etiology, interpretation of mechanism of fetal death and the general population characteristics.[2,3] The RCOG green top guideline on late stillbirths suggests to advise parents that no specific cause may be found in almost half of these cases.[4]

Every "unexplained" stillbirth must go through a complete work up to establish etiology and only after all plausible causes remain unattachable, the "unexplained" title is acceptable. Sometimes on careful reconsideration, subtle facts of a cse may get highlighted and that shifts the diagnosis from an unclassifiable zone into a known pathology.

Case Scenario

Mrs A, 25 year old primigravida, booked for antenatal care at 6 weeks gestation. She had regular antenatal check ups, normotensive, normoglycemic, normal fetal scans till 32 weeks. Last antenatal check up was done 2 weeks back which was uneventful. Presents today in ObGyn emergency at 36 weeks with reduced fetal movements – fetal heart not localised – intrauterine fetal demise confirmed on scan.

The EFW at the 32 weeks scan was 1.78kg – 48th centile and the birth weight at 36 weeks was 2.1kg (12th centile).

This shows a drop in the "centiles" and indicates a "slowing" of the growth pattern – probably a late onset fetal growth restriction. In most cases, the correct estimation of gestational age, the actual weight of the baby at birth and the serial growth pattern of the fetus in utero will establish of there is any possibility of a late onset IUGR. This type of late onset growth restriction may be missed unless serial growth charts are plotted as the baby may not actually be "SGA". In this type of growth restriction, the Doppler changes are mild with almost no changes in the umbilical flows but mild alteration of the cerebroplacental ratio. The potential for fetal compromise however, is very severe as these fetuses have low tolerance and the condition itself has no known natural history.[5]

Doing a late third trimester growth scan can help in identifying this group of late onset IUGR which may still be technically "AGA," but due to the plateauing of the growth curve, are at high risk of stillbirth. These pregnancies have to be then intensively monitored and surveillance instituted in antepartum and intrapartum period. The actual feasibility of this

protocol still remains debatable as the resource requirements are plenty and need appropriate justification. Unless this growth pattern is properly identified, the cause of stillbirth may not be apparent.

EVALUATING THE RISK FACTORS

Accurate pregnancy dating is one of the most important steps in preventing stillbirths as almost 14% of stillbirths were attributed to occur due to "prolonged pregnancy" in the report of the Lancet Ending Preventable Stillbirths Series study group. [6]

In some cases there may be clues seen in hindsight like realising that there was a low value for PAPP-A (pregnancy associated plasma protein A) in the first trimester screen – defined as less than 0.4MoMs. Usually this biomarker is evaluated as part of the Down syndrome screening test and if the overall screening result is low risk for aneuploidies, the report of labelled as "normal" and one does not actually look into the value of PAPP_A individually. The point to note is that this has some predictive value for the possibility of IUGR, maternal PIH and hence the risk of stillbirth.[7,8]

As an isolated marker its role is not clinically robust but in combination with other variables in maternal demographics, history and biophysical markers, it can be useful. A thorough "relook" into all relevant clinical variables – maternal and fetal are thus warranted before labelling any stillbirth as truly unexplained. The preceding chapters have enumerated the expected work up protocols and in nutshell the most useful tests include placental pathology and fetal autopsy followed by genetic testing and testing for antiphospholipid antibodies.[9]

A "triple risk" model to study unexplained stillbirths was proposed by Warland and Mitchell [10] such that a stillbirth occurs as a result of an intersection of three elements - 1)maternal factors and 2) fetal vulnerability in the presence of a 3) fetal stressor. Death occurs only if all three factors intersect and only if the stressor and maternal factor match the specific vulnerability of the individual fetus. Therefore, the same critical event and/ or maternal factors are not always associated with stillbirth or even poor pregnancy outcome.

In some situations we may be able to identify specific risk factors like maternal preeclampsia, smoking, fetal congenital heart disease, abruption of the placenta or some obvious cord problem like a true knot etc. When we are unable to find any definite explanation despite the most elaborate search protocol for possible causes, we are left with the diagnosis of exclusion – "unexplained stillbirth". We can definitely counsel the parents that this is a clinical reality and although we have many theories in each case the actual cause may remain obscure. The challenges of counselling in such situations cannot be understated. It is however very important to counsel these parents objectively explaining all the facts, the tests done , the normalcy of the reports and thus the inability to assign a cause to the fetal loss. The counselling should be thoroughly documented. In addition to the technical aspects, their emotional needs also must be recognised and the information should be passed on in a sensitive manner.

PLAN FOR FUTURE

An important issue in handling unexplained stillbirths is the planning of the next pregnancy. It is imperative that pre pregnancy maternal health should be optimised with an ideal BMI, smoking cessation, screening for infections like Rubella and Varicella for which immunisation is available, optimisation of haemoglobin, sugars and

thyroid function along with pre pregnancy Folic acid supplementation.

Mental preparedness for the next pregnancy is important and if necessary professional counselling should be offered to women who don't seem to have recovered from the trauma of the previous fetal loss. Formal assessment of the couple's level of depression and anxiety to identify pathological grief responses is worthwhile. The Edinburgh Postnatal Depression Scale[11] can be used for psychological assessment in these cases.

In a subsequent pregnancy following unexplained stillbirth[12], early booking and correct assessment of gestational age is important. Appropriate screening tests in early pregnancy for fetal aneuploidies and anomalies by scans and blood markers should be done. Serial fetal growth monitoring with ultrasound based biometry and Doppler studies will be useful in detecting subtle growth pattern changes. Maternal morbidity surveillance specifically for diabetes is important. Late pregnancy surveillance can be based on CTG or biophysical profile and the plan should be to avoid prolonged pregnancy. While most of the subsequent pregnancies following unexplained stillbirths will be uncomplicated, most authorities have stated that the single most important aspect of management of uncomplicated pregnancies after an unexplained stillbirth may be delivery by 39 weeks.[13,14]

CONCLUSION

Unexplained stillbirth remains a difficult area to study, explain and thus there is dearth of "level 1"evidence for planning investigations and care in these cases. Nevertheless it is a well-defined and recognised entity and every practising obstetrician will, like it or not, have to face such a situation a few times through his or her clinical career. Most of the times such cases appear like a "bolt from the blue" and one can never be truly, fully prepared to face the implications. It is thus imperative to have a mental checklist ready at all times to handle cases of stillbirth. Every case must be put through the rigmarole of thorough history, examination and investigation and only when all reasons seem not applicable the case remains "unexplained stillbirth" – a diagnosis of exclusion.

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"Happiness is not something you postpone for the future; it is something you design for the present."

— Jim Rohn

Genetic Evaluation for Single Gene Defects in Still Birth

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INTRODUCTION

When a single gene is known to cause a disease, it is labelled as a 'single gene disorder' or a Mendelian disorder. Examples of single gene disorders include thalassemia, sickle cell anemia, fragile X syndrome, muscular dystrophies, cystic fibrosis, Huntington's disease etc. The five most common genetic disorders in Indian ethnicity are beta thalassemia, cystic fibrosis, sickle cell anemia, spinal muscular atrophy (SMA) and Haemophilia A. Genetic disorders are increasingly emerging as a common cause of morbidity and mortality in newborns and children.[1] These may also be responsible for unexplained stillbirths and the RCOG guidelines recommend genetic evaluation for single gene disorders where other possible causes of intrauterine fetal demise have been excluded.[2]

INHERITANCE PATTERNS

Single gene disorders follow the Mendelian pattern of inheritance of which five types are recognized:

1. *Autosomal recessive inheritance* (figure 1): The disease is caused only when both copies of a single gene are defective. Parents are usually unaffected 'carriers' of the defective gene. The risk of having an affected child when both parents are carriers is 25% or 1 in 4. If only one parent is a carrier but the other has both normal genes, there is a 50% chance that the children will also be unaffected 'carriers'. The risk of autosomal recessive disorders increases in consanguineous couples. Examples include beta thalassemia, cystic fibrosis, spinal muscular atrophy, sickle cell anemia.

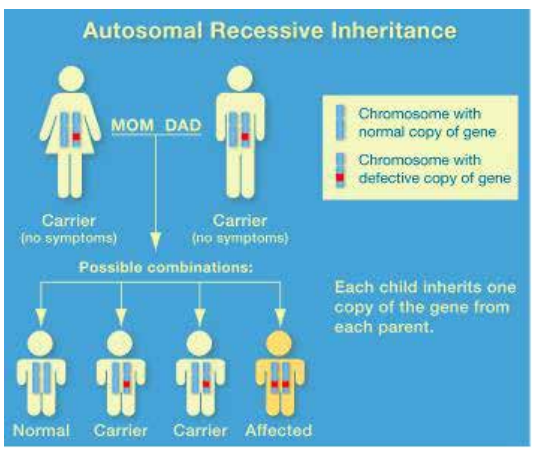

Figure 1: There is 1 out of 4 chance that a child will be affected when both parents carry the defective gene in AR monogenic diorders.

2. *Autosomal dominant inheritance* (figure 2): Even the presence of a single defective gene will result in the disease, eg Huntington's disease, achondroplasia etc. If the disease is inherited, one of the parents will be affected. These single gene disorders may also arise 'de novo' in any fetus/newborn.

3. *X linked recessive inheritance:* Females carry 2 copies of the X gene. Thus, diseases where gene situated on the X chromosome are defective, usually cause the disease in males carrying the defective gene. Women are usually carriers of these disorders; though the disease may sometimes become apparent in them as well due to 'X – inactivation'. Haemophilia A is an X linked recessive disorder.

4. *X linked dominant inheritance*: These will affect even women who are carrying only one copy of the defective gene. Males are severely affected and an X linked dominant disease is virtually fatal in affected males. Example includes Fragile X syndrome.

5. *Mitochondrial or 'maternal' pattern of inheritance*: Mitochondrial DNA (mDNA) is inherited from the mother; thus, diseases transmitted through the mitochondria are termed 'maternal' pattern of inheritance. In these disorders, the change in the mitochondrial genome is to such an extent ('heteroplasmy') that it gives rise to symptoms. The amount of defective mDNA inherited would be variable; hence all children will not have the disease.[3]

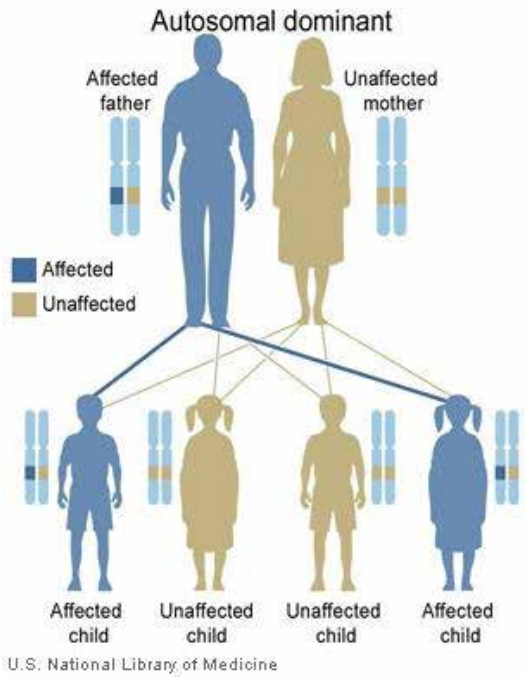

Figure 2: There is 1 out of 2 chance that a child will be affected when one parent carries the defective gene in AD monogenic diorders.

GENETIC EVALUATION IN UNEXPLAINED STILLBIRTH

Karyotyping remains the most important test in unexplained stillbirth as nearly 6-12% of stillborn babies will have a chromosomal abnormality.[2] However, a significant portion may also be caused by hitherto undiagnosed single gene disorders which will not be diagnosed on conventional karyotyping or even microarray. Targeted molecular genetic testing is appropriate when single gene disorders are suspected. Thus, it is recommended that in case of unexplained stillbirths, DNA storage should be done so as to allow for further genetic evaluation if a single gene disorder is suspected. Deep fetal skin, fetal cartilage and/or placenta are the preferred specimens to be stored. Autosomal recessive metabolic disorders known to cause stillbirth include hemoglobinopathies, esp alpha thalaseemia, amnio aicd disorders like glutaric aciduria and storage disorders like galactosialodosis, Gaucher's disease, Nieman Pick, gangliosidosis type I etc. Usually these present as nonimmune hydrops in the antenatal period. Some X linked dominant disorders may cause intrauterine demise in male fetuses, eg incontinenta pigmenti. A thorough history taking with pedigree charting is invaluable while looking for a genetic cause in unexplained stillbirth.

EVALUATION FOR SINGLE GENE DISORDERS

Single gene disorders may be tested by PCR, Sanger sequencing, MLPA and other molecular testing. The strategy for testing for these disorders could be either of the following:

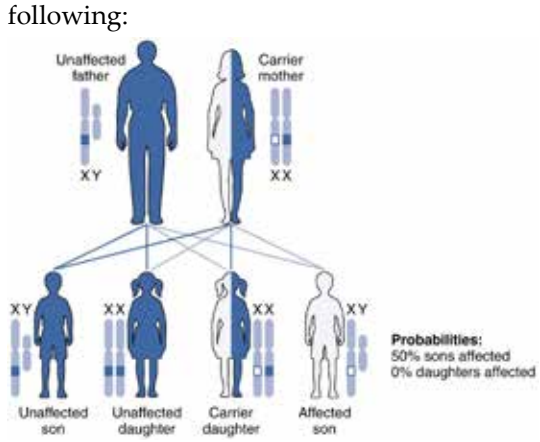

Figure 3: X-linked-recessive disease

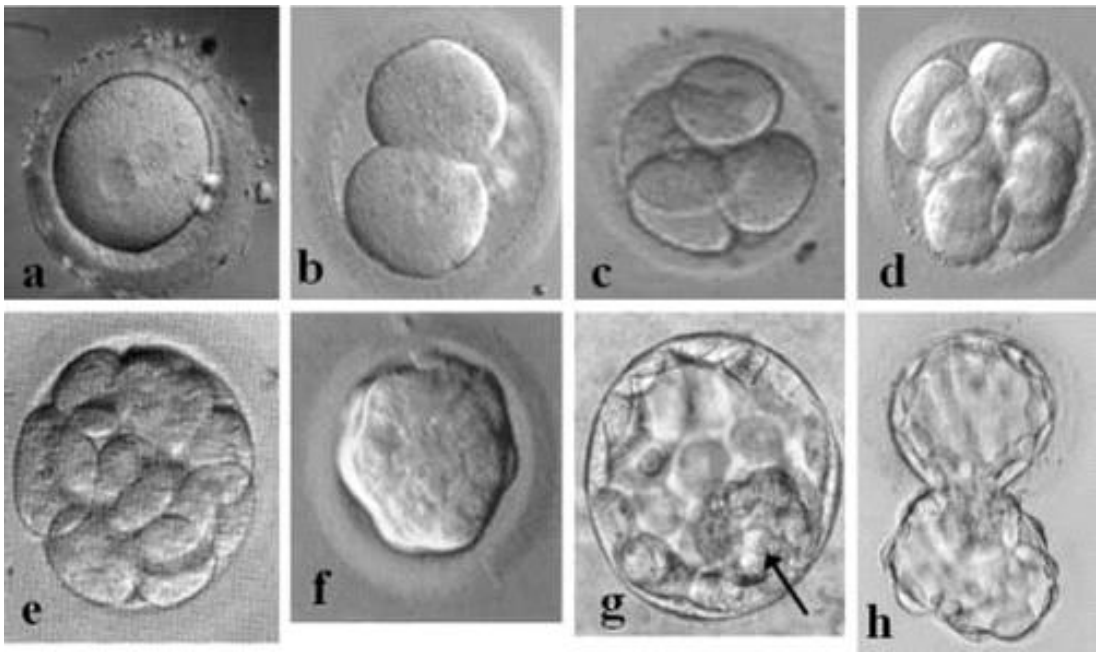

Figure 4: Human embryo development from fertilized egg to hatching blastocyst. (a) Fertilized egg with two pronuclei visible (day 0); (b) two-cell stage (day 1); (c) four-cell stage (day 2); (d) eight-cell stage (early day 3); (e) 16-cell stage (late day 3); (f) morula stage (day 4); (g) blastocyst stage (day 5) with inner cell mass indicated by the arrow; (h) hatching blastocyst.[9]

1. *Diagnostic testing*: A genetic test is performed in an affected individual to confirm or exclude a genetic condition, eg a family brings their child who is suspected to have thalassemia as he/she is always anemic and requires regular blood transfusions. The child undergoes a blood test to identify the mutation in the beta-globin gene which would 'confirm' the genetic cause of his/her disease.
2. *Carrier testing*: Genetic testing of unaffected relatives of an affected person is called 'carrier testing' eg if the parents and siblings of the affected child mentioned above would be termed 'carrier testing'. These individuals will generally have limited or no health consequence of being 'carriers'.
3. *Prenatal testing*: When the genetic test is performed during pregnancy in families at risk of having an affected child, eg if the mother of the abovementioned affected child is pregnant in the second pregnancy, she would be offered prenatal testing.
4. *Preimplantation genetic diagnosis (PGD)*: With advances in artificial reproductive techniques, parents at risk of having an affected child may choose to test 'embryos' for the disease and opt for embryo transfer of only unaffected embryos.
5. *Predictive testing*: The genetic test is done in a healthy individual but at risk of having the disorder which usually manifests late, eg, children of an individual diagnosed with Huntington's disease at 50 years of age because symptoms appeared only that late in life.
6. Genetic screening: A genetic test is offered to the general population irrespective of perceived risk. However, the cost efficacy of such a strategy must be evaluated before implementation.

PRENATAL DIAGNOSIS OF SINGLE GENE DISORDERS

Beta thalassemia major is the most common single gene disorder in India with a carrier frequency of 5-17% with some population groups having even higher carrier rates.[4] The frequency of carriers is 5% in Delhi and neighbouring states, 4% in Mumbai and as high as 8% in Kolkata.[5] Screening for carrier status can be done by estimation of Hb, RBC count, MCV & MCH. The most accurate method of establishing carrier status is determination of HbA2 by HPLC. The pan-ethnic genetic conditions like Spinal Muscular Atrophy and Duchenne Muscular Dystrophy (DMD) have prevalence and carrier rates similar to worldwide prevalence.

Thus, a thorough personal as well as family history must be taken when a pregnant patient presents for her first antenatal visit. Use of pre-formulated history sheets helps in optimizing the time required for such detailed history taking. Taking a good family history would be the single most important tool in identifying individuals 'at risk' of being carriers. Alternatively, the women may come because of an affected previous child who may or may not be alive. Ideally the mutation responsible for single gene disorder should be identified prior to conception; however, this may not be possible when the patient presents in pregnancy itself. Thus, parents and/or the affected child should be tested as soon as possible.

Prenatal diagnosis is offered by means of chorionic villus sampling (CVS) in the first trimester (after 10 weeks) or amniocentesis (after 16 weeks). If the mutation in parents/affected child has already been identified prior to invasive prenatal testing, the turnaround time for diagnosis in prenatal sample is less than a week. However, if the mutation is not identified, parental and/or affected child's blood samples are sent along with the prenatal sample and reports may take 10 – 14 days to arrive. In some cases where the common mutations are not identifiable, gene sequencing may be required which may take 4-6 weeks. Thus, parents must be counseled regarding these timelines. The legal limit of 20 weeks for termination of pregnancy in our country makes this especially important.

A thorough counselling of parents is needed prior to invasive testing including why it is important to check for a particular disease, what are the possible results of the test with management options in each scenario and the 1% risk of miscarriage associated with invasive testing.[6,7] This discussion should be documented in the patient's case records and an informed consent should be taken. These are outpatient procedures with minimal risk to the mother. However, strict asepsis should be maintained as per any other invasive procedure.

PREIMPLANTATION GENETIC DIAGNOSIS (PGD)

When invasive prenatal testing results show an affected fetus, most parents will choose to terminate the pregnancy. The chances of having an affected fetus will remain the same in every subsequent pregnancy making it an extremely traumatic experience notwithstanding the clinical and economic aspects.

PGD uses standard assisted reproduction technologies, including controlled ovarian stimulation, oocyte retrieval, in vitro fertilization/intracytoplasmic sperm injection (ICSI), and in vitro embryo culture.[8] The fertilized egg undergoes reductive cell division and reaches the eight-cell stage around 3 days postfertilization (figure 4). Morula formation is on day 4, and the embryo reaches the blastocyst stage on day 5 when the inner cell mass is clearly differentiated from the trophectoderm.

PGD requires biopsy from either the oocyte and/or the developing embryo. The biopsied material is tested for the genetic condition, and unaffected embryos are transferred to the uterus. PCR technology is applicable to single gene disorders where the familial mutations are known. Single-cell PCR tests for PGD have now been developed for over 30 different monogenic diseases (ESHRE 2002). The latest published data collection from the European Society for Human Reproduction and Embryology (ESHRE 2002) details a 21% pregnancy rate per oocyte retrieval and a 25% pregnancy rate per embryo transfer for monogenic diseases. There is a small possibility of misdiagnoses; thus many geneticists opine that the results be confirmed with invasive testing in pregnancy.

CONCLUSION

With the rapid advances in molecular diagnostic technology and expertise in India, the aim of clinicians should be to identify individuals at risk and offer them genetic evaluation with the target of preventing the birth of an affected child. Since single

gene disorders may also be responsible for unexplained stillbirth, care should be taken to store fetal and/or placental tissue which can be used for genetic evaluation. A diagnosis of single gene disorder in prior stillbirth is imperative for future pregnancy management.

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"Keep your face always toward the sunshine—

and shadows will fall behind you."

— Walt Whitman

"Let us make our future now,

and let us make our dreams

tomorrow's reality."

—Malala Yousafzai

Breaking the Bad News & Grief Counselling in Still born

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INTRODUCTION

As physicians, we are accustomed to relating bad news to patients and their families. In most of these scenarios, the possibility of adverse results or outcomes has already been anticipated. While dealing with such situations is never easy, our job is usually made straight forward by the prologue. In stark contrast, having to relate news of abnormal finding when both patient and family are expecting good new scan be one of the most difficult challenges that we face. Such is the case when there is the unexpected occurrence of intrauterine fetal demise or still birth in the office setting.

Although ultrasound technology in many ways has redefined obstetrics, the physician's rapport with his patient will never be displaced as the cornerstone of medical care. Having a conversation with a family after the successful birth of a healthy newborn is easy. Offering a conversation with a family after an adverse unanticipated event draws on the most noble resources in medicine, having compassion.

APPROACH TOWARDS BREAKING BAD NEWS

There is no single approach that will work in every situation or circumstance. Consider all the aspects in clinical history:

- Is this her first pregnancy or does she have children at home?
- Is this a desired pregnancy?
- Is this a pregnancy that has been achieved only after many years of trying, perhaps requiring in vitro fertilization(IVF) or other reproductive assistance?
- Were there preceding symptoms?
- Had a previous scan detected abnormalities or problems?
- Has she had any bleeding or spotting?
- Have there been any other symptoms?
- Have there been any complications during the pregnancy?
- When was the last time when fetal movement was felt?

All are factors that can influence the patient's initial response and the practitioner must be prepared to react appropriately in many different ways, through a wide spectrum of possibilities. This questioning serves two more purposes. Firstly, it provides the physician with useful information. Secondly, it will begin to alert the patient to the possibility of a problem. Once the physician has confirmed the loss of viability, the patient should be informed immediately and gently.

As such, physicians must be prepared and flexible. Once in the room, it is generally advisable to repeat key portions of the ultrasound. This can be done by physician personally or by the sonographer with the physician present. If the patient is unaware of the findings of intrauterine demise, the practitioner should begin asking questions as the scan is in progress.

The patient who had a "feeling" that something wasn't right may immediately start out as "acceptance" whereas someone expecting only good news may well begin at "denial" or "anger". And the degree of this response can range from complete silence to virtual hysteria. It is virtually impossible to accurately anticipate how patients may react.

If the patient already knows that this is a loss, the approach is slightly different. Firstly, the patient will have already had some time to decompensate and physician will have already had a chance to gage the patient's state of mind. Whenever possible, either if the patient already knows or has just found out , the scan should be repeated with an active dialogue about what is being seen and how the findings confirm the demise. Point out the heart show lack of heartbeat in multiple modalities;2D, pulsed wave Doppler, M mode, color Doppler. Demostrate spalding sign, hydrops or edema, if present. Demonstrate size/date discrepancies. If obvious anomalies are present, try to point those out. Do not hesitate to refer the patient to a perinatal centre for evaluation if current capabilities are limited.

GRIEF COUNSELLING

Discomfort experienced by the patient, both physically and emotionally, often drives care providers to withdraw, leaving the patient feeling isolated and lonely.

As comprehensive management of the case of stillbirth, grief counselling is an important aspect. The first step is to allow the patient and her support person(s) to have some time to themselves. Let her know that you are going to give them some time and that you will return. If no one is with her, ask if she would like to make a call or if you can call someone for her.

The second step is to engage the office staff. Patient often have developed a relationship with one or more members of the office staff and frequently see them as friends.

The third step is to recognize that the patient may not be ready to deal with the situation. Allow her to leave if neccessary. Offer to reschedule a follow up appointment. Make sure she has contact phone numbers. Make follow up phone calls. Offer to set up confirmatory scans or second opinions.

The next scenario occurs when the husband or other person becomes angry and difficult to deal with. It is critical to be patient in these circumstances. Most of the time, the support person is just trying to ventilate and/or decompensate. Under no circumstances should the physician become confrontational. It may, on rare occasion, be necessary to involve security. More often, the situation will resolve with individual regaining composure or choosing to leave.

A common situation arises when the patient herself is totally appropriate but unable to move forward with discussions. The physician should reassure the patient and emphasize that this is not an emergent situation. Let her know that she has time to take everything in and to discuss with her family. Schedule her to come back the next day. Often, she will call back within minutes or hours asking to come back in.

DO'S AND DON'T'S

- Be aware of individual & cultural variations
- Don't say that you know how she feels. You probably don't. Even if you have had a similar experience, your circumstances were different. However, if you have been through the same thing, do let the patient know that.
- Manage as a potential for post-traumatic stress disorder. Offer counselling & support
- Don't say that it is better to have it happen now than later. No matter how you look at it the patient and family have lost a child that they wanted and loved. Maybe

it is not the same thing as losing a three-year old but it is a loss none the less.

- A litigious climate, it can be hard to develop long term relationships. This is specially so when the physician may only have five or ten minutes to spend with any given patient.
- Don't try to solve their problem or reassure them, just listen and summarise/bounce their concerns back to them and expand on them. (It shows you are listening and conveys empathy)
- Offer autopsy after obtaining informed consent of the parents for insight into cause of stillbirth

SUGGESTED READING

1. What Do I Say and How Do I Say It? Communicating Intended and Unintended Events in Obstetrics Editors James Woods, Fay Rosovsky Jossy Bass, San Francisco, Calif (April 2003)
2. Strategies for communicating bad news in Obstetrics. James R. Woods, Jr., M.D. Henry A. Thiede Professor and Chair Department of Obstetrics and Gynecology University of Rochester School of Medicine and Dentistry Rochester, New York.
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Yogananda says

"When you are steadfast in the principles of the guru-disciple relationship, the spiritual path becomes very easy. You cannot then go astray. No matter how delusion tries to pull you away, the master who has experienced God knows your trouble and will help you to steady yourself on the path again. That is what the guru does for you if you are in tune with him."

"Never give up.

Today is hard, tomorrow will be worse,

but the day after tomorrow will be sunshine"

- Buddha

"Knowing is not enough, we must apply.

Willing is not enough, we must do"

- Goethe

Brain Teasers

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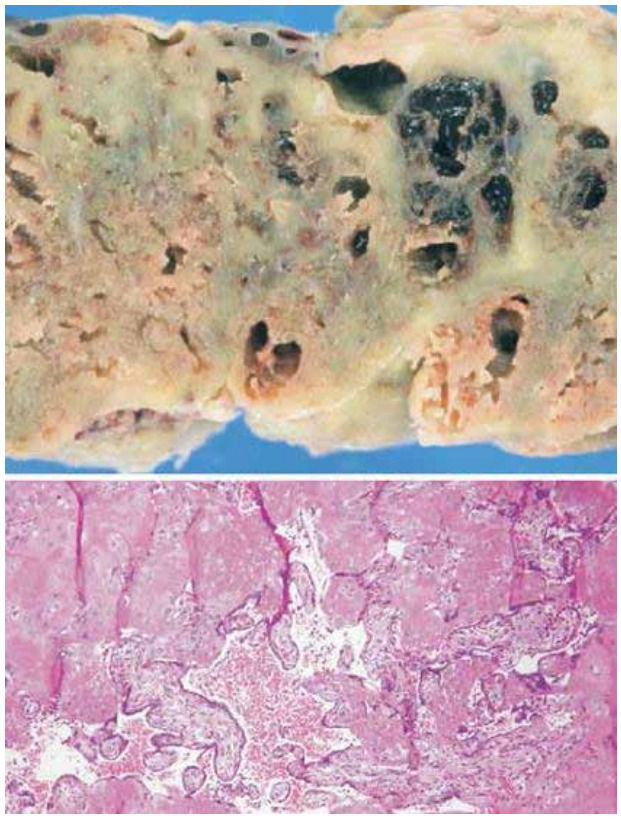
Chairperson Quiz Committee FOGSI (2015-2017)

Q. 1.



a. Identify the uncommon placental pathology associated with stillbirth seen in this macroscopic and microscopic picture of placenta?

b. What is the rate of stillbirth in cases complicated by this pathology?

Q. 2. All of the following are indications for immediate termination of pregnancy in intrauterine deaths except :

a. Sepsis

b. Pre-eclampsia

c. Membrane rupture

d. Rh –isoimmunisation

Q. 3. State whether the following statement is true or false:

In a woman with obstetric cholestasis, the risk of stillbirth increases with gestation.

Q. 4. According to the India Newborn Action Plan (INAP) what is the target set for reduction of stillbirth per 1,000 births by 2030?

ANSWERS TO BRAIN TEASERS – SEPTEMBER ISSUE

Q. 1. Congenital Adrenal Hyperplasia

Q. 2. Schiller duval body in Yolk Sac Tumour

Q. 3. C. Annovulation

Q 4. Congenital Adrenal Hyperplasia

Q. 5. Mature cystic teratoma and endodermal sinus tumour of the ovary.